

We Claim:

1. A method of inducing apoptosis of a malignant cell comprising:
administering to a malignant cell a calcium-activated potassium channel activator in an amount sufficient to induce apoptosis of the cell.
2. The method of Claim 1, wherein the malignant cell is a glioma or astrocytoma cell.
3. The method of Claim 1, wherein the calcium-activated potassium channel activator is NS-1619.
4. The method of Claim 1, wherein the calcium-activated potassium channel activator is bradykinin or a bradykinin analog.
5. The method of Claim 1, wherein the calcium-activated potassium channel activator is triethylamine.
6. The method of Claim 1, wherein the calcium-activated potassium channel activator is a soluble guanylyl cyclase activator, YC-1, or a guanylyl cyclase activating protein.
7. The method of Claim 1, wherein the malignant cell is in vitro.
8. A method of selectively inhibiting the proliferation of malignant cells compared to non-malignant cells in a mixed population of malignant and non-malignant cells, comprising:
administering to the mixed population of malignant and non-malignant cells a calcium-activated potassium channel activator in an amount sufficient to induce apoptosis of at least a plurality of malignant cells compared to non-malignant cells, thereby selectively inhibiting the proliferation of malignant cells.
9. The method of Claim 8, wherein the mixed population of malignant and non-malignant cells is an in vitro population.

10. The method of Claim 8, wherein the mixed population of malignant and non-malignant cells is in a tumor, in vivo, in a mammalian subject.

11. The method of Claim 10, wherein said mammalian subject is a human, a non-human primate, a canine, a feline, a bovine, a porcine, an ovine, a mouse, a rat, a gerbil, a hamster, or a rabbit.

12. The method of Claim 8, wherein the malignant cells are glioma or astrocytoma cells.

13. The method of Claim 8, wherein the calcium-activated potassium channel activator is NS-1619.

14. The method of Claim 8, wherein the calcium-activated potassium channel activator is bradykinin or a bradykinin analog.

15. The method of Claim 8, wherein the calcium-activated potassium channel activator is triethylamine.

16. The method of Claim 8, wherein the calcium-activated potassium channel activator is a soluble guanylyl cyclase activator, YC-1, or a guanylyl cyclase activating protein.

17. A method of inhibiting the growth of a malignant tumor in a mammalian subject, comprising:

administering to a mammalian subject having a malignant tumor that comprises a malignant cell, a calcium-activated potassium channel activator under conditions and in an amount sufficient to induce apoptosis of the cell, whereby growth of the malignant tumor is inhibited.

18. The method of Claim 17, wherein the malignant cell is a glioma or astrocytoma cell.

19. The method of Claim 17, wherein the malignant tumor is a glioma, a glioblastoma,

an oligodendroglioma, an astrocytoma, an ependymoma, a primitive neuroectodermal tumor, an atypical meningioma, an malignant meningioma, a neuroblastoma, a sarcoma, a melanoma, a lymphoma, or a carcinoma.

20. The method of Claim 17, wherein the malignant tumor is contained in the skull, brain, spine, thorax, lung, abdomen, peritoneum, prostate, ovary, uterus, breast, stomach, liver, bowel, colon, rectum, bone, lymphatic system, or skin, of said subject.

21. The method of Claim 17, wherein the calcium-activated potassium channel activator is NS-1619.

22. The method of Claim 17, wherein the calcium-activated potassium channel activator is bradykinin or a bradykinin analog.

23. The method of Claim 17, wherein the calcium-activated potassium channel activator is triethylamine.

24. The method of Claim 17, wherein the calcium-activated potassium channel activator is a soluble guanylyl cyclase activator, YC-1, or a guanylyl cyclase activating protein.

25. The method of Claim 17, wherein said mammalian subject is a human, a non-human primate, a canine, a feline, a bovine, a porcine, an ovine, a mouse, a rat, a gerbil, a hamster, or a rabbit.

26. The method of Claim 17, wherein administering the calcium-activated potassium channel activator is by intravenous or intra-arterial injection.

27. The method of Claim 17, wherein the tumor is an intracranial tumor and the calcium-activated potassium channel activator is administered by intracarotid infusion.

28. The method of Claim 17, wherein the calcium-activated potassium channel activator

is administered to the mammalian subject by a bolus injection.

29. The method of Claim 17, wherein the calcium-activated potassium channel activator is administered to the mammalian subject in an amount from about 0.075 to 1500 micrograms per kilogram body mass.
30. The method of Claim 17, wherein the calcium-activated potassium channel activator is administered to the subject in an amount from about 0.075 to 150 micrograms per kilogram body mass.
31. The method of Claim 17, wherein the calcium-activated potassium channel activator is administered to the mammalian subject at a dose rate of about 0.075 to about 100 $\mu\text{g kg}^{-1} \text{ min}^{-1}$ for up to about 30 minutes.
32. The method of Claim 31, wherein the calcium-activated potassium channel activator is administered to the mammalian subject at a dose rate of about 0.075 to about 15 $\mu\text{g kg}^{-1} \text{ min}^{-1}$.
33. A method of inhibiting the growth of a glial tumor in a mammalian subject comprising:
administering to a mammalian subject having a glial tumor that comprises a malignant cell, a calcium-activated potassium channel activator under conditions and in an amount sufficient to induce apoptosis of the cell, whereby growth of the malignant tumor is inhibited.
34. The method of Claim 33, wherein the calcium-activated potassium channel activator is NS-1619.
35. The method of Claim 33, wherein the calcium-activated potassium channel activator is triethylamine.
36. The method of Claim 33, wherein the calcium-activated potassium channel activator is

bradykinin or a bradykinin analog.

37. The method of Claim 33, wherein the calcium-activated potassium channel activator is a soluble guanylyl cyclase activator, YC-1, or a guanylyl cyclase activating protein.

38. The method of Claim 33, wherein said mammalian subject is a human, a non-human primate, a canine, a feline, a bovine, a porcine, an ovine, a mouse, a rat, a gerbil, a hamster, or a rabbit.

39. The method of Claim 33, wherein administering the calcium-activated potassium channel activator is by intravenous or intra-arterial injection.

40. The method of Claim 33, wherein the tumor is an intracranial tumor and the calcium-activated potassium channel activator is administered by intracarotid infusion.

41. The method of Claim 33, wherein the calcium-activated potassium channel activator is administered to the mammalian subject by a bolus injection.

42. The method of Claim 33, wherein the calcium-activated potassium channel activator is administered to the mammalian subject in an amount from about 0.075 to 1500 micrograms per kilogram body mass.

43. The method of Claim 33, wherein the calcium-activated potassium channel activator is administered to the subject in an amount from about 0.075 to 150 micrograms per kilogram body mass.

44. The method of Claim 33, wherein the calcium-activated potassium channel activator is administered to the mammalian subject at a dose rate of about 0.075 to about 100 $\mu\text{g kg}^{-1} \text{ min}^{-1}$ for up to about 30 minutes.

45. The method of Claim 33, wherein the calcium-activated potassium channel activator

is administered to the mammalian subject at a dose rate of about 0.075 to about 15 $\mu\text{g kg}^{-1} \text{ min}^{-1}$.

46. A kit for selectively inducing apoptosis of malignant cells, comprising:
a pharmaceutically acceptable formulation of a calcium-activated potassium channel activator;
and instructions for using it to selectively induce apoptosis of malignant cells.
47. The kit of Claim 46, wherein the calcium-activated potassium channel activator is NS-1619.
48. The kit of Claim 46, wherein the calcium-activated potassium channel activator is triethylamine.
49. The kit of Claim 46, wherein the calcium-activated potassium channel activator is bradykinin or a bradykinin analog.
50. The kit of Claim 46, wherein the calcium-activated potassium channel activator is a soluble guanylyl cyclase activator, YC-1, or a guanylyl cyclase activating protein.